

Remarks:

The claims have been rejected under section 103 with regard to the Hays reference or Fischer patent in light of patents to Kruse or Snyder. All of these patents and references are of record.

The Hays reference is not a tough collector in the general sense of that term. Trough collectors may be thought of as resembling a cylinder that has been cut in half lengthwise and are disposed to allow liquids to flow in one direction. The applicant's claimed invention has the cylindrical shape and additionally has a tube or trough inside. Hay's figures 6 and 6a may be thought of as a conical subterranean greenhouse but is not a trough collector or even a flat plate collector. The other figures shown in Hay's are also not of the same nature as the applicant's invention and do not appear relevant to the 103 rejection. .

Moreover, the Hay's reference does not show the idea of a continuous feed of liquid from end of the distillation device which is claimed in the applicant's invention. Note figure 5 of the applicant's drawings as well as written description teach this idea. The Hay reference does not show or suggest the need for the trough on the inside of the applicant's apparatus to be tilted in one direction in order to facilitate the flow of liquid through the device. Hay does mention collecting water off the top of the plastic cover so it doesn't leak into the collector, but this is not related to the idea of flowing the liquid on the inside of the applicant's distillation device. Again Hay does not talk about the continuous flow of liquid, his invention is designed to collect the liquid in one place only and such does not provide for the flow of liquid.

Nor does the Hay's reference teach the use of a means to reduce the pressure in connection with the main chamber (or "outer tube" as referred to in the applicant's claims). In fact, the construction of the Hay's devices teach against the idea of using a vacuum or lowered pressure means as the billowy or flimsy material would make it impossible to lower the pressure inside of his designs without impacting on the structural integrity of the outer material. Such material would interfere with the liquid inside. Nor does any of the prior art suggest or teach the idea of lowering the inside pressure of this sort of trough collector.

Also the use of a trough raised at one end permits continuous processing of the liquid and such allows for the tube and trough to be built of substantial lengths. There is no self imposed limitations on length as suggested by the prior art. For example Hay specifies that a "10 foot width maybe the maximum desirable for V covers, since distances greater than 5 feet from ridge to valley may permit wind flutter in the [plastic] V covers." Hence the construction material used in the Hay designs imposes limits on the length of the apparatus that may thus be constructed. Such idea teaches against the idea of creating a distillation device that can be of any length so as to allow for continuous fractions to be taken across a great length.

Similar considerations inure to the Kruse an Snyder devices. For example, the Kruse device is designed to float as a boat and hence impose limitations as to size. Boats cannot be effectively constructed to be of the same length as pipelines or aqueducts. However, the applicant's construction does allow such possibilities. Same is true for Snyder which is also designed as a buoy and suggests a length of 50-100 feet. Again this cannot compare with the applicant's device which permits a pipeline of miles or hundreds of miles in length. Again the large length of device that the applicant's

construction permits can also allow for branching of the pipe (or outer tube in the claims) and so direct desalinated water, for example, to many different districts from one central location.

Moreover the use of boats or floats teaches against the idea of flowing the liquid that is collected in one direction. Boats and buoys are designed to float on the surface of water and such teaches against the idea of allowing the liquid to flow in one direction only. The rise and fall of the waves would prevent an incline in one direction only. There is no suggestion in the prior art of the desirability or preferability of inclining the applicant's trough at one end.

Nor does any of the prior art show the idea of focusing the radiation onto the liquid being carried in the lower section of the outer tube. This is claimed in claims 12 and 17. The Fischer patent, cited by the examiner, in this regard does not show the idea of focusing light on the lower section of the tube or apparatus in order to heat liquid in the lower section so that it can then be collected (after evaporation and condensation) in the trough above the lower section. In the Fischer patent the trough is shown as one tube only and there is no provision for separate holding of liquid in a lower section and hence there is no teaching of the idea of heating the liquid in a separate lower section. Such construction as the applicant's allows the liquid in the lower section to be heated while the cooled distillate is collected in a separate trough. The use of the small pipe in Fischer with no other collector does not allow for expansion of the liquid in a separate section away from the trough collector. And such construction would permit the distillate to be heated as well. The applicant's heating of the liquid separate from the distillate would be more efficient than anything taught in the prior art. Such construction as the applicant's allows the non distilled portion of the water to

be heated without heating the fraction that has already been distilled and collected in the trough.

None of the prior art shows or suggests the idea of photochromic materials in connection with the outer tube of the applicant's apparatus. Such materials may be of great value to the applicant's apparatus in particular as the use of such materials allows the apparatus to be self adjusting in terms of the interior temperature level and such considerations may enhance the distillation process as it occurs over the length of the outer tube.

Note that the parabolic shape of the lower section; the reflecting onto the lower section; lowering the interior pressure and the raising one level of the trough are described on the bottom of page 6 and the top of page 7 of the CIP papers, filed 9/29/97 in this application.

Respectfully submitted,


John P. Halvonik
Registry No. 32,796
Attorney for applicant

Law Offices of John P. Halvonik
806 W. Diamond Ave.
Suite 301
Gaithersburg, MD. 20878
(301) 990-9393